

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

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APR 21 1992

Federal Communications Commission
Office of the Secretary

In the Matter of

Local Exchange Carrier Line
Information Database

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CC Docket No. 92-24

ORIGINAL
FILE

DIRECT CASE OF THE
AMERITECH OPERATING COMPANIES

Floyd S. Keene
Michael T. Mulcahy
Larry A. Peck
Attorneys for the
Ameritech Operating Companies
2000 W. Ameritech Center Drive
Room 4H86
Hoffman Estates, IL 60196-1025
(708) 248-6074

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**DIRECT CASE OF THE
AMERITECH OPERATING COMPANIES**

I. SUMMARY AND INTRODUCTION.

The Ameritech Operating Companies¹ file their direct case in response to the Order Designating Issues for Investigation released by the Common Carrier Bureau in this docket on March 20, 1992.² On November 12, 1991, the Companies filed Tariff Transmittal No. 574, that sought to offer a new service, Signal Transfer Point (STP Access), which includes a Dedicated Network Access Link (DNAL). At the same time, the Companies filed Tariff Transmittal No. 575, that also sought to offer a new service, Line Information Data Base (LIDB). Both tariff transmittals include proposed new and revised tariff sheets and a Description and Justification. The Bureau suspended the transmittals for one day, imposed an accounting order, and initiated this investigation in the LEC LIDB Order.

¹The Ameritech Operating Companies are: Illinois Bell Telephone Company; Indiana Bell Telephone Company, Incorporated; Michigan Bell Telephone Company; The Ohio Bell Telephone Company; and Wisconsin Bell, Inc. These entities also are referred to as "the Companies" in these comments.

²Hereinafter referred to as the ("LEC LIDB Order").

The Companies will demonstrate that the terms and conditions of their STP Access and LIDB services are reasonable and are properly described in the tariffs. The tariffs also correctly utilize readily available technical publications to specify the details of the interfaces and technical parameters of the services.

The rates for the services are reasonable, cover applicable costs and are fully supported in the Description and Justifications filed in the tariff transmittals. The investment and factors used to calculate the costs of the services are accurate and correct. The Companies properly used the Common Channel Signaling Cost Information System (CCSCIS) to develop the costs of common channel signaling (CCS) equipment used by the services. CCSCIS properly assigns shared CCS facilities and equipment to individual services and produces costs that are consistent between services.

LIDB is a new and discretionary service for which significant competition exists. As such, LIDB is appropriately priced to the market, based upon the prices for competitive alternatives. However, LIDB rates are established at levels above relevant costs and that meet the Commission's net revenue test. Market-based rates for competitive and discretionary services are in the public interest because they facilitate efficient competition, enhance customer choice and encourage LEC investment in these services.

II. THE BUREAU'S QUESTIONS.

In the LEC LIDB Order,³ the Bureau directs local exchange carriers ("LECs") who filed LIDB and STP Access tariffs to respond to three questions bearing on whether the tariffs and the proposed rates are reasonable. The

³*Id.* ¶ 2.

third question addresses rate levels and has five sub-questions, of which three apply to the Companies. The questions that relate to the Companies are:

- I. Have the LECs adequately described the LIDB service in the tariffs?
- II. Should the tariffs contain additional detail regarding the technical parameters for the CCS interconnection link used in the provision of the STP Access service?
- III. Are the rate levels established in the tariffs excessive?
 1. Bell Communications Research, Inc. has developed a cost model called "Common Channel Signaling Cost Information System" (CCSCIS). Any carrier who relied on CCSCIS to develop its rates must explain why use of such model is appropriate for CCS services.
 2. All filing carriers should provide total investment underlying each of the four rate elements and should identify the accounts established by Part 32 of the Commission's Rules, 47 C. F. R. Part 32, in which these investments are recorded.
 3. All filing carriers should identify and fully document all factors applied to the investment identified in response to the requests for information above to develop the rates, cross-referencing to Automatic Reporting Management Information System (ARMIS) data where possible.⁴

III. THE COMPANIES' ANSWERS.

The Companies will answer each of the Bureau's questions separately. However, the Bureau should keep in mind in reviewing the Companies' answers to the rate development questions that the Companies did correctly calculate the costs of the services and did establish rates that cover relevant

⁴*Id.* ¶ 2.

costs and meet the Commission's net revenue test, but that the LIDB rates were ultimately set at levels that also are competitive with the other alternatives.

A. The Companies Have Adequately
Described the LIDB Service.

In the LEC LIDB Order, the Bureau asks several questions concerning the service description and terms of the LIDB tariff. As a preliminary matter, it should be noted that the Companies' LIDB tariff properly specifies the terms and conditions of the service. The LIDB tariff clearly articulates the service interexchange carriers will receive and the terms under which the service will be provided. Tariffs do not and should not spell out every technical detail and nuance of the service; this is the job of technical publications. The technical details of the interface, protocols and parameters of the LIDB service are therefore handled in technical publications.

Repeating technical information in the tariffs would be redundant, burdensome and is not in the public interest. Such a practice would require tariffs that are many times larger than those in use today. The resulting tariffs would be so cluttered with technical minutia as to be virtually unusable. Moreover, unless technical publications were repeated verbatim in the tariffs, there would be a significant risk of a conflict between the tariffs and the technical publications. In addition, an omission or paraphrasing of a portion of a technical publication in a tariff could mislead users. Furthermore, repeating technical publications in tariffs would delay improvements in procedures and practices by requiring that they be implemented only through formal tariff changes.

The Bureau asks six specific questions concerning the LIDB tariff. The Companies will answer each question separately, except that they will combine their answers to the Bureau's two questions concerning LEC liability.

1. The Frequency, Nature and Priority of Database Updates Should Not Be Specified in the Tariff.

The Bureau asks whether the LIDB tariff should provide the frequency, nature and priority of database updates. A schedule of updates to LIDB properly was not included in the Companies' LIDB tariff because LIDB service simply offers to interexchange carriers access to the database that the Companies normally use for their own calls. The LIDB tariff was not intended to create new requirements concerning the maintenance of that database.

In considering the reasonableness of not specifying a schedule for LIDB updates in the LIDB tariff, the Bureau should keep in mind that the Companies have a significant stake in the accuracy of LIDB since they are one of its largest users. As a practical matter, the Companies' objective is to update LIDB daily, based on service order activity. In addition, emergency updates relating to lost and stolen cards are made as soon as feasible after the information is received by the database administration center.

2. The Companies' Liability for Erroneous Information in LIDB is Properly Limited by the Tariff.
The Companies' Liability for Fraudulent Use of Calling Cards is Also Limited by Tariff.

The Bureau asks whether the LIDB tariff should specify LEC liability for erroneous information in the database. The Bureau also asks if LECs should be liable for fraudulent use of calling cards. The fact of the matter is that the Companies' liability is specified in the tariff. The Companies' liability is limited by the general limitation of liability applicable to other services.⁵ The apparent genesis of this question is not whether LEC liability should be specified, but whether it should be limited on the same basis as other services. Some carriers seem to want the Companies to insure and guarantee their collections. However, the creation of special onerous liability requirements is unnecessary and in direct conflict with the basic purpose of the LIDB service.

The Companies are a large user of their LIDB. As a result, the Companies have a very substantial interest in having LIDB as accurate as feasible in order to help minimize fraudulent usage of their services. Users of LIDB will enjoy the fruits of that incentive without creating special oppressive and costly liability requirements for the Companies. For example, the Companies already have undertaken significant audit and fraud prevention measures for LIDB. Those measures are discussed in detail in the Companies' Reply to Petitions to Reject/or Suspend Transmittal 575 and will not be repeated in full here.⁶ In summary, the Companies use two routine audit procedures for LIDB. In addition, LIDB has significant fraud control

⁵Tariff FCC No. 2, page 2.1.3A.

⁶At pp. 3, 4-5.

measures, including ones based on monitoring the frequency of queries on particular calling card numbers. The threshold number of queries used for fraud detection is the same for all carriers, including the Companies.

LIDB service was designed to provide validation information for calling cards which will help other carriers decide whether to extend credit. However, LIDB was not intended to provide the unregulated, non-common carrier functions such as credit analysis or assumption of credit risk. The Commission should not seek to expand LIDB service into these areas by requiring LECs to guarantee collection on calls validated through LIDB. If the Companies were to enter into the unregulated credit or collection business in the future, they would need to develop separate charges for those functions that reflect their added costs and risks. Such costs and risks are not reflected in the rates for the LIDB service. In addition, the Companies would also need to determine if there is sufficient demand and willingness to pay to warrant offering them.

3. The Date of the Latest Technical Publication
Is Specified in the Tariff.

The Bureau asks whether the issuance dates for technical publications should be specified in the LIDB tariff. The Companies did provide that information in their Tariff F.C.C. No. 2, 9th Revised Page 19.1.

4. Reasonable Call Gapping Procedures Are Specified in a Technical Publication.

The Bureau inquires about the inclusion in the tariff of call gapping procedures. Call gapping is the procedure used to control and manage the flow of traffic into the LIDB, when the database is receiving more traffic than it can handle. Call gapping procedures are specified in Technical Publication TR-NWT-001158. This technical publication specifies that the LIDB does not identify the origin of a query and, therefore, the call gapping procedures do not discriminate against any carrier or user. A reference to this publication can be added to the LIDB tariff but, once again, there is no need to duplicate the publication in the tariff.

5. Reasonable Procedures for Processing LIDB Queries Are Specified in Technical Publications.

The Bureau asks whether additional parameters for processing database queries should be reflected in the tariff. The answer is no. Query processing procedures are specified in technical publications. The technical publications are reasonable and complete and need not be repeated in the tariff.

For example, Technical Publication TR-NWT-001158 states that the LIDB is designed to achieve an objective of unavailability for a mean processing time of not more than twelve hours per year.⁷ In addition, LIDB is designed for a service objective of a mean processing time (response time) of not more than .025 to 0.5 second and not to exceed 1.0 second for 99% of messages. If deemed appropriate, the Companies will add a reference to this publication in the LIDB tariff.

⁷The Companies' LIDB has historically performed much better than this objective (approximately 3 minutes per year) due to redundancy in the Companies' LIDB.

B. The Companies Have Provided the Same Reasonable Level of Technical Detail in Their 56 Kbps Tariff and STP Access Tariff.

The Bureau asks whether the STP Access tariff should contain the same level of detail concerning technical parameters as is specified in the 56 Kbps tariff. The answer to the Bureau's question is that Companies have provided the same level of technical detail regarding service parameters in both tariffs. In essence, both tariffs utilize technical publications to specify the technical parameters of the services.

For example, the STP Access tariff references Technical Publication TR-TSV-000905, Common Channel Signaling (CCS) Network Interface Specification that contains detailed descriptions of the technical parameters of the interface of the service. Again, this technical publication is readily available to carriers and addresses technical matters in far more detail than can reasonably be repeated in a tariff.

C. The Rate Levels in The Tariff Are Reasonable and Cover Costs.

1. The LIDB Rates Are Competitive, Cover Relevant Costs and Meet the Net Revenue Test.

As demonstrated in the Description and Justification accompanying Tariff Transmittal No. 575,⁸ LIDB service is a new and discretionary service for which competitive alternatives exist. As such, the rates for LIDB service were set at levels which are based upon the rates for comparable competitive

⁸At pp. 6-8.

services, but above relevant costs and in compliance with the Commission's net revenue test.⁹

LIDB service is a part of a billing service which is not required to transport or route calls. The Companies offer LIDB service to interexchange carriers as an optional service. Interexchange carriers do not have to accept the Companies' calling cards or to validate them through LIDB to complete calls. As detailed in the LIDB Description and Justification, the interexchange carriers have several billing options all of which are currently in use.¹⁰ These options include calling cards issued by interexchange carriers, use of commercial credit cards (VISA, Master Card, American Express, etc.) or direct billing arrangements with the customer, such as collect and bill to third number.

As a result of the existence of these substantial competitive billing alternatives and the discretionary nature of the service, the Companies priced LIDB service to the market, based upon the prices of competitive alternatives. Market-based rates enhance competition and facilitate an efficient marketplace to the benefit of LECs, carriers and customers. If LIDB rates are arbitrarily set too high relative to competitive alternatives, then interexchange carriers will simply not accept the Companies' calling cards and will not use LIDB service. If rates are arbitrarily set too low, then competition would be artificially stifled. Either scenario will lead to an inefficient marketplace and diminished customer choice.

The charges for LIDB service compare favorably with the rates for similar competitive validation services. The total proposed charge for a LIDB

⁹*Id.*

¹⁰Transmittal No. 575 at pp. 6-7.

validation query is \$.03, which is comprised of a LIDB Transport charge of \$.00012 and a LIDB Validation charge of \$.029880. These charges are similar to the \$.038 charged by other validation service providers which license the Companies' and other LECs' data. As a result of competition, the price of \$.038 is the culmination of significant price reductions over the past three years, during which rates have dropped to their current level from a high of \$.22 in 1988. The proposed charge of \$.03 per query for LIDB service is reasonable when compared to the charge for these competitively determined alternatives. The charge also is above the relevant cost of providing the service and will provide a contribution to the recovery of overhead costs.

As demonstrated by the analysis of the net revenue test in the Description and Justification to Transmittal No. 575, the proposed rates for LIDB service do not result in a subsidy from any other service.¹¹ The existence of a positive result in the net revenue test required under Part 61.49 of the Commission's Rules effectively demonstrates that no subsidy flows to LIDB service at the proposed rate levels.

In summary, the proposed LIDB rates are just and reasonable since they are consistent with the prices for competitive alternatives, pass the net revenue test and cover relevant costs. The very existence of competitive alternatives will ensure that prices for LIDB service will remain reasonable through market dynamics, and no further review is required.

¹¹Transmittal No. 575, Description and Justification, p. 9 and Exhibit 7.

2. The Common Channel Signaling Cost Information System (CCSCIS) Was Correctly Used to Determine Costs.

CCSCIS is a proprietary cost model developed by Bellcore that can be used to determine the costs associated with CCS-based services. The Bureau asks LECs to state whether they used CCSCIS as a cost model for their LIDB and STP Access services and, if so, to explain why CCSCIS is appropriate. CCSCIS was used by the Companies because that cost model allows for the costing of individual CCS network services, such as LIDB and STP Access, that share some common CCS equipment. CCSCIS is based on sound engineering principles and proven economic theory. It assigns the costs of shared CCS equipment to individual services using a methodology that assigns equal costs for equal use of the same shared resources to all services. CCSCIS is the optimal cost methodology available for determining the direct costs of the STP Access and LIDB services.

CCSCIS utilizes an engineering based, bottom-up costing approach. Bellcore has obtained engineering data and technical information from the vendors under proprietary agreements, which include data such as engineering rules, equipment capacities, prices and detailed technical descriptions of the equipment architecture. This information permits the determination of the functional characteristics of each piece of CCS equipment. CCS equipment is then mapped into one or more cost categories. These cost categories represent the cost drivers or the lowest common denominators of cost that can be identified for each piece of equipment. These cost drivers are then combined in various ways, based upon each individual service's utilization, to obtain the unit investment for specific services.

Currently, CCSCIS contains separate equipment models for the STP, SCP and SS7 links. Each vendor's equipment also is modeled separately. In addition, there is an aggregation model that combines the output of the other models to determine combinations of unit investments which can be used to calculate the costs of particular cost elements, such as a LIDB query. New models are developed as new CCS equipment becomes available and existing models are regularly updated to reflect new vendor prices, additional functions and engineering changes.

3. LIDB and STP Access Investment Were Properly
Calculated For Each Rate Element.

The Bureau asks filing carriers to provide total investment underlying each rate element and to identify the accounts established by Part 32 to which each investment was assigned. The Companies' LIDB and STP Access costs appropriately reflect only components of the CCS network that are directly used to provide the services. The costs were determined in large part through CCSCIS, based upon an analysis of the services. In the case of LIDB service, the SCP processors associated with providing the LIDB query, the links between the SCP and the port termination at the STP, and the STP Port terminations account for the investments underlying the costs. The STP Access service costs include the investment required to terminate a link from the signaling point to the STP and the dedicated link from the customer premises. The individual investments underlying the Validation and Transport Query rate elements for LIDB service and the Port Termination and DNAL rate elements for STP Port Access service, and the accounts to which those investments are assigned are displayed in Appendix A.

4. The Factors Applied to Investment
Are Reasonable and Consistent.

The Bureau asks filing carriers to identify and fully document the factors applied to the investment to develop costs, cross-referencing to ARMIS data, where appropriate.

a. Direct Annual Cost Factors.

The annual or recurring costs calculated by the Companies represent the yearly expenses generated as a result of the investment used to provide the services. There are two types of factors used to develop annual costs. The first, referred to as annual capital costs, includes depreciation, cost of money and income tax. The second type, referred to as operating expenses, includes maintenance expense and ad valorem tax.

Appendix B details the Direct Annual Cost Factor for the STP and SCP investment. The development of this factor is representative of the methodology used to calculate all Direct Annual Cost Factors. The annual charge factors used for the DNAL direct cost development are exhibited in Appendix C.

b. Description Of Annual Capital Costs.

1. Depreciation.

Two types of depreciation are involved in the calculation of annual capital costs -- book depreciation and tax depreciation. Book depreciation allocates the cost of an asset over its life; it is a direct component of recurring capital costs. The annual book depreciation for the services was calculated by spreading their total installed cost (less net salvage value) over the economic life of their investment.

Tax depreciation is the schedule of expense deductions used in calculating income tax liability. Income tax regulations allow for the use of accelerated tax depreciation and shortened prescribed tax lives for most new investments. With accelerated tax depreciation, tax depreciation expenses are greater during the earlier years of an asset's life, than in later years. Although tax depreciation is not a component of recurring capital costs, it does affect income tax liability.

The depreciation component of the capital costs of the services reflects an economic life of seven years and a net salvage value of 15.83%. The resulting factor of 0.1399 was calculated by dividing levelized depreciation costs by the total investment.

2. Cost of Money.

Investors' capital is used to purchase telephone plant used to provide the services. As a result, it is necessary to pay a return to investors for the use of their capital. Cost of money is the amount which must be earned to cover these financial commitments to the Companies' bondholders (interest rate on bonds) and shareholders (return on equity). The cost of money for the LIDB and STP Access services was determined by using the composite cost of capital applied to net plant, where net plant is calculated by subtracting accumulated depreciation from plant in service. The composite cost of capital is calculated as follows:

<i>Return on Equity</i> (12.5%)	x	% of Equity in Capital Structure (65%)	=	Equity Earnings Fraction (8.1%)
<i>Interest Rate</i> (9.2%)	x	% of Debt in Capital Structure (35%)	=	Interest Fraction (3.2%)

The resulting composite cost of capital is 8.1% + 3.2% or 11.3%. A 0.0521 factor is derived by dividing the levelized cost of money by total investment.

3. Income Tax.

Income tax will be owed to federal and state governments because the Companies will earn a return from the services. The income tax costs of the services was developed using a ratio of federal and state income tax rates applied to the portion of income resulting from the services. The composite income tax rate was calculated as follows:

$$7.2\% + ((1-7.2\%) \times 34\%) = 38.75\%$$

The state income rate in the above formula is 7.2% and the federal rate is 34%. The resulting income tax factor is 0.0235, which is calculated by dividing the levelized income tax expense by total investment.

c. Operating Expenses.

1. Maintenance.

Maintenance costs will be incurred for the STP Access and LIDB services in order to keep facilities and equipment used to provide the services in operating condition. Included in this classification are direct labor, material and engineering associated with maintenance work.

The maintenance factors used in these studies represent the relationship between maintenance expense and investment. This ratio of maintenance expense to investment is based on data from the general ledger (total year expenses and investments). The end of period account balances reported in corporate general ledgers were used to develop average annual investments for each plant account and average annual expense in each associated maintenance account. These averages are based on three consecutive years of data. Current Costs/Book Cost ratios were developed and used to convert each year's average investment to a dollar value consistent with expense dollars associated with that investment. The resulting maintenance factor used for the SCP and STP investment is 0.0726.

2. Ad Valorem Tax.

The ad valorem tax factor used in these studies represents taxes levied by some states on the assessed value of plant used to provide the services. The factor includes personal property and capital stock taxes and is applied to total investment. The ad valorem tax factor used in the studies is 0.003.

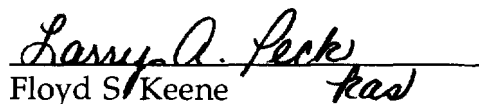
d. Overhead Loading.

A Fully Distributed Cost (FDC) Annual Charge Factor (ACF) was developed for the studies from the 1990 ARMIS Report for Local Transport. The FDC ACF represents the annual costs associated with Local Transport investment as determined by Part 69 Rules. This factor was calculated by dividing the portion of total direct and indirect costs allocated to Local Transport by the portion of equipment investment allocated to Local Transport. The factor is 1.4404.

A ratio which represents the overhead loadings for Local Transport as determined by Part 69 Rules was calculated by dividing the FDC ACF by the Direct Unit Cost ACF. The ratio was applied to the direct unit cost to produce the unit costs with loadings. The FDC costs are set forth in Exhibit 3 of the Description and Justification for Transmittal No. 575, and Exhibit 4 of the Description and Justification for Transmittal No. 574. Exhibits 3 and 4 are attached as Appendix D.

IV. CONCLUSION.

The Companies have demonstrated that the LIDB and STP Access tariffs and rates are just and reasonable. The tariffs should remain in effect without change and the accounting order and investigation should be lifted.


Floyd S Keene *kas*
Michael T. Mulcahy
Larry A. Peck
Attorneys for the
Ameritech Operating Companies
2000 W. Ameritech Center Drive
Room 4H86
Hoffman Estates, IL 60196-1025
(708) 248-6074

Date: April 21, 1992

TOTAL INVESTMENTS AND ACCOUNTING CLASSIFICATIONS

<u>RATE ELEMENT</u>	<u>INVESTMENT</u>	<u>PART 32 ACCOUNT</u>
LINE INFORMATION DATA BASE:		
VALIDATION QUERY	\$4,376,670	2212 Digital Switching Equipment
TRANSPORT QUERY	\$71,963	2212 Digital Switching Equipment 2232 Circuit Equipment 2411 Poles 2421 Aerial Cable 2422 Underground Cable 2423 Buried Cable 2441 Conduit
STP ACCESS:		
STP PORT (PER PORT)	\$19,707	2212 Digital Switching Equipment 2232 Circuit Equipment
DNAL		
– 56 Kbps Digital LDC	\$4,566	2411 Poles 2421 Aerial Cable 2422 Underground Cable 2423 Buried Cable 2441 Conduit 2232 Circuit Equipment
– 56 Kbps Digital Channel Mileage Termination	\$136	2232 Circuit Equipment
– 56 Kbps Digital Channel Mileage	\$24	2411 Poles 2421 Aerial Cable 2422 Underground Cable 2423 Buried Cable 2441 Conduit 2232 Circuit Equipment

**AMERITECH
DIRECT ANNUAL COST FACTOR**

STP/SCP INVESTMENT

L1	DEPRECIATION	0.1399
L2	COST OF MONEY	0.0521
L3	INCOME TAX	0.0235
L4	TOTAL CAPITAL COST FACTOR (L1+L2+L3)	0.2155
L5	MAINTENANCE	0.0726
L6	AD VALOREM TAX	0.0030
L7	OPERATING EXPENSE FACTOR (L5+L6)	0.0756
L8	TOTAL ANNUAL COST FACTOR L4+L7	0.2911 *

***Direct Annual Cost Factor that appears in Transmittal 574, Exhibit 4 and Transmittal 575, Exhibit 3.**

APPENDIX C

AMERITECH 56 KBPS DNAL INVESTMENTS AND RECURRING COSTS

Rate Element	Total Installed Investment	Annual Cost	Annual Cost Factor	FDC Cost Factor	FDC Annual Cost
56 Kbps Digital LDC	\$4,566.39	\$1,640.48	0.359	1.7013	\$2,790.95
56 Kbps Digital Channel Mileage Termination	\$136.07	\$39.48	0.290	1.7013	\$67.17
56 Kbps Digital Channel Mileage	\$24.30	\$7.08	0.291	1.7013	\$12.05

Note: Direct Annual Cost Factors include direct capital costs (depreciation, cost of money, and income taxes) and operating expenses. FDC Costs were calculated using the special access fully distributed cost factor of 1.7013 developed from the 1990 Access filing. Details were provided in Ameritech's direct case for Optinet 64 Kbps, Transmittal No. 518, Docket 91-215, filed 9-17-91.

LOCAL TRANSPORT
OVERHEAD LOADING FACTOR

Exhibit 3

LN.#	DESCRIPTION	SOURCE	VALUE
-----	-----	-----	-----
1.	Total Direct & Indirect Costs	1990 ARMIS, Report 43-01	\$461,905,000
2.	COE-Switch Investment	43-01, ln.1640	\$108,232,000
3.	COE-Tran Investment	43-01, ln.1650	\$647,365,000
4.	Cable & Wire Investment	43-01, ln.1660	\$346,009,000
5.	Total Local Trans	ln.2+ln.3+ln.4	\$1,101,606,000
6.	FDC Annual Charge Factor	ln.1/ln.5	0.4193
7.	Direct Unit Cost Annual Charge Factor		0.2911
8.	Overhead Loading Factor	ln.6/ln.7	1.4404

LOCAL TRANSPORT
OVERHEAD LOADING FACTOR

Exhibit 4

LN.#	DESCRIPTION	SOURCE	VALUE
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1.	Total Direct & Indirect Costs	1990 ARMIS, Report 43-01	\$461,905,000
2.	COE-Switch Investment	43-01, ln.1640	\$108,232,000
3.	COE-Tran Investment	43-01, ln.1650	\$647,365,000
4.	Cable & Wire Investment	43-01, ln.1660	\$346,009,000
5.	Total Local Trans	ln.2+ln.3+ln.4	\$1,101,606,000
6.	FDC Annual Charge Factor	ln.1/ln.5	0.4193
7.	Direct Unit Cost Annual Charge Factor		0.2911
8.	Overhead Loading Factor	ln.6/ln.7	1.4404